

STATEMENT OF THE CLAIMS

1. (currently amended) A bone anchoring device comprising:

~~a bone anchoring element provided with a head for receiving a threaded shaft upon which a clamping means is screwed having a first end face and defining a longitudinal axis;~~

a threaded shaft having a second end face at an end thereof facing the first end face of the bone anchoring element;

a clamping means screwed to the head of the bone anchoring element for holding the threaded shaft in longitudinal relation to the bone anchoring element;

a spherical articulation provided between the bone anchoring element and the threaded shaft in order to allow multiple orientation of the threaded shaft, wherein contact between the first and second end faces delimit the extent of movement of the spherical articulation; and

rotational linkage means situated on the longitudinal axis and between the bone anchoring element and the threaded shaft permitting spherical articulation between the bone anchoring element and the threaded shaft and capable of rotationally locking the bone anchoring element and the threaded shaft, regardless of the multiple orientation for of the threaded shaft relative to the bone anchoring element,

wherein the rotational linkage means comprises a female geometrical form cooperating with a complementary male geometrical form, delimiting therebetween a clearance in order to allow multiple orientation between the threaded shaft and the bone anchoring element, the female and male geometrical forms having non-circular transverse cross-sections.

2. (original) The bone anchoring device according to claim 1, wherein the rotation linkage means are provided outside the spherical articulation.

3. (canceled)

4. (previously presented) The bone anchoring device according to claim 1, wherein one of the geometrical forms is provided on the head of the bone anchoring element, and wherein the other geometrical form is provided on the end of the threaded shaft.

5. (currently amended) The bone anchoring device according to claim 1 wherein one of the geometrical shapes is provided on [[an]] the end face of the bone anchoring element, extending within an open housing provided in the head and receiving the end of the threaded shaft made as a ball-and-socket joint in order to form the spherical articulation, said ball-and-socket joint being provided with the other geometrical form on [[its]] the transverse face.

6. (original) The bone anchoring device according to claim 5, wherein the transverse face of the ball-and-socket joint and the end face of the bone anchoring element extend a distance from one another in order to allow multiple orientation of the threaded shaft.

7. (original) The bone anchoring device according to claim 6, wherein at least one of the transverse face of the ball-and-socket joint and the end face of the bone anchoring element has a convex shape.

8. (original) The bone anchoring device according to claim 5, wherein the male geometrical form is made on the end of the bone anchoring element, and wherein the female geometrical form is provided on the ball-and-socket joint.

9. (original) The bone anchoring device according to claim 1, wherein the receiving head forms a grip nut for a screwing tool.

10. (new) A bone anchoring device comprising:

a bone anchoring element provided with a head and defining a longitudinal axis;
a threaded shaft;
a clamping means screwed to said head of the bone anchoring element for holding the threaded shaft in longitudinal relation to the bone anchoring element;

a spherical articulation provided between the bone anchoring element and the threaded shaft in order to allow multiple orientation of the threaded shaft relative to the bone anchoring element; and

rotational linkage means situated on the longitudinal axis between the bone anchoring element and the threaded shaft permitting the spherical articulation between the bone anchoring element and the threaded shaft and capable of rotationally locking the

bone anchoring element and the threaded shaft, regardless of the multiple orientation of the threaded shaft relative to the bone anchoring element,

wherein the rotational linkage means comprises a female non-circular geometrical form on the longitudinal axis cooperating with a complementary non-circular male geometrical form on the longitudinal axis, delimiting therebetween a clearance in order to allow multiple orientation between the threaded shaft and the bone anchoring element.

11. (new) A bone anchoring device comprising:

a bone anchoring element provided with a head having a first end face and defining a longitudinal axis;

a threaded shaft having a second end face at an end thereof facing the first end face of the bone anchoring element;

a clamping means screwed to the head of the bone anchoring element for holding the threaded shaft in longitudinal relation to the bone anchoring element;

a spherical articulation provided between the bone anchoring element and the threaded shaft in order to allow multiple orientation of the threaded shaft, wherein contact between the first and second end faces delimit the extent of movement of the spherical articulation; and

rotational linkage means situated on the longitudinal axis and between the bone anchoring element and the threaded shaft permitting spherical articulation between the bone anchoring element and the threaded shaft and rotationally locking the bone anchoring element and the threaded shaft, regardless of the multiple orientation of the threaded shaft relative to the bone anchoring element.

12. (new) A bone anchoring device according to claim 11, wherein:

 said rotational linkage means includes a recess having a non-circular geometric form in cross-section transverse to the longitudinal axis.

13. (new) A bone anchoring device according to claim 11, wherein:

 one of said first and second end faces is flat.

14. (new) A bone anchoring device according to claim 13, wherein:

 the other of said first and second end faces is convex.